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NOTES ON SIR CHARLES LYELL'S ANTIQUITY OF MAN.*

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IN his introductory remarks Mr. Crawford stated that in his observations on Sir Charles Lyell's book he should strictly confine himself to those branches of the subject on which he had bestowed special attention. He stated his conviction that the evidence which of late years had been adduced, giving to the presence of man on the earth an antiquity far beyond the usual estimate of it, is satisfactorily established, and that there can now be no question that man was a contemporary of animals, such as lions, hyænas, elephants, and rhinoceroses, extinct far beyond the reach of human record. Among the evidences brought forward to prove the antiquity of man, the paucity of relics of his own person, compared with the abundance of those the unquestionable work of his hands, has attracted special notice. That scarcity of human remains, compared with those of the lower animals, might, he thought, be to some extent accounted for. In the savage state man is ever few in number compared with the wild animals; and when he first appeared on earth—when naked, unarmed, without language, and even before he had acquired the art of kindling a fire, the disparity must have been still greater. In that condition he would have to contend for life and food with ferocious beasts of prey, with nothing to depend upon but a superior brain. In such circumstances the wonder is, not that he should be few in number, but that he should have been able to maintain existence at all. Sir Charles Lyell adopted the theory of the unity of the human race, which no doubt best accords with the hypothesis of the transmutation of species; but neither he nor any one else has ventured to point out the primordial stock from which the many varieties which exist proceeded. We see races of men so diverse, physically and mentally, as Europeans, negroes of Africa, negroes of New Guinea and of the Andaman Islands, Arabs, Hindus, Chinese, Malays, Red Americans, Esquimaux, Hottentots, Australians, and Polynesians. So far as our experience carries us, these races continue unchanged as long as there is no intermixture. The Ethiopian represented on Egyptian paintings four thousand years old is exactly the Ethiopian of the present day. The skeleton of an Egyptian mummy of the same date does not differ from that of a modern Copt. A Persian colony settled in Western India a thousand years ago, and rigorously refraining from intermixture with the black inhabitants, is not now to be distinguished from the descendants of their common progenitors in the parent country. Recent discoveries enable us to give additional evidence of the most instructive kind. Sir Charles Lyell himself stated, "The human skeletons

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of the Belgian caverns, of times coeval with the mammoth and other extinct mammalia, do not betray any signs of a marked departure in their structure, whether of skull or limb, from the modern standard of certain living races of the human family." In the same manner the human skeletons found in the pile buildings of the Swiss lakes, and computed by some to be twelve thousand years old, differ in no respect from those of the present inhabitants of Switzerland. If the existing races of man proceeded from a single stock, either the great changes which have taken place must have been effected in the locality of each race, or occurred after migration. Now, distant migration was impossible in the earliest period of man's existence. With the exception of a few inconsiderable islands, every region has, within the historical period, been found peopled, and usually with a race peculiar to itself. To people these countries by migration must have taken place in very rude times, and in such times nothing short of a great miracle could have brought it about. He concluded, then, that there is no shadow of evidence for the unity of the human race, and none for its having undergone any appreciable change of form. If one thousand years, or four thousand or ten thousand years, or a hundred thousand, supposing this last to be the age of the skeletons of the Belgian race contemporary with the mammoth, it is reasonable to believe that multiplying any of these sums by a million of years would yield nothing but the same cipher. Sir Charles Lyell, Mr. Crawford observed, has adopted what has been called the Aryan theory of language, and fancies that he finds in it an illustration of the hypothesis of the transmutation of species by natural selection. The Aryan or Indo-European theory, which had its origin and its chief supporters in Germany, is briefly as follows. In the most elevated table-land of Central Asia there existed, in times far beyond the reach of history or tradition, a country, to which, on very slender grounds, the name of Aryana has been given, the people and their language taking their name from the country. The nation, a nomadic one, for some unknown cause betook itself to distant migrations, one section of it proceeding in a south-eastern direction across the snows and glaciers of the Himalayas, to people Hindûstan, and another in a north-westerly direction, to people Western Asia and Europe, as far as Spain and Britain. The entire theory is founded on the detection of a small number of words, in a mutilated form, common to most, but not to all, the languages of Western Asia and Europe—a discovery, no doubt, sufficiently remarkable, but clearly pointing only to an antiquity in the history of man far beyond the reach of history or tradition. On the faith of these few words, and as if language were always a sure test of race, people bodily and intellectually the most incompatible—the black, and the tawny, and the fair; the ever strong and enterprising, the ever weak and unenterprising—are jumbled into one undistinguishable mass, and, with extraordinary confidence, pronounced to be of one and the same blood. A language which the theorists have been pleased to call the Aryan is the presumed source of the many languages referred to. But the Aryan is but a language of the imagination, of the existence of which no proof ever has been or can ever

be adduced. The Aryan theory proceeds on the principle that all languages are to be traced to a certain residuum called "roots." Some languages either are so, or are made to be so by grammarians. The copious Sanskrit is said to be traceable to some one thousand nine hundred roots, all monosyllables. The languages to which he had given special attention are certainly not traceable to any monosyllabic roots. In their simplest forms, a few of the words of these languages are monosyllables, but the great majority are bisyllabic or trisyllabic, without any recondite sense whatever. But were the Aryan or Indo-European hypothesis as true as he believed it to be baseless, he could not see how it illustrates, or can have any possible bearing at all on the theory of the transmutation of species by natural selection, the progress of which is so slow—if, indeed, there be any progress at all—that no satisfactory evidence of it has yet been produced. The changes in language, on the contrary, are owing to forces in unceasing and active operation, and the evidences are patent and abundant. They consist of social progress, and of the intermixture of languages through conquest, commercial intercourse, and religious conversions. Sir C. Lyell gives it as his opinion that no language lasts, as a living tongue, above one thousand years. As the authentic history of man is not above three times that length, and as, in some quarters of the world, the vicissitudes of language have been unquestionably great, it would no doubt be difficult to produce examples of a much longer duration. The Arabic, however, may be cited as a language which has had a somewhat longer duration, for the Koran is good Arabic at the present day, after the lapse of twelve hundred and forty years; and when the stationary state of society which belongs to East, and the peculiar physical geography of the native country of the Arabs are considered, Mr. Crawford said he saw no reason why it may not have been of twice the duration assigned to language by Sir Charles Lyell. He was told by competent judges that, saving the loss of its dual number and middle voice, modern Greek does not materially differ from ancient; and if such be the case, the Greek language—dating only from the time of Homer (and even then it was a copious tongue)—has lasted some two thousand six hundred years. All the languages of the world have been reckoned by some at four thousand, and by other at six thousand, but it is certain the real number is unknown. As a general rule, languages are numerous in proportion as men are barbarous. As we advance in society they become fewer. This last is the result of the amalgamation of several tongues, and the disappearance of others. There are more languages in Africa and in America than in Continental Asia; and probably as many in Australia, with its handful of Aborigines, as in Europe. In Mexico, the most civilized part of America, and where as far as regards that continent, they are consequently the fewest, there are still twenty native languages. Java, with twelve millions of inhabitants, has but two languages; while in rude and barbarous Borneo, with probably not a tithe of its population, fifty have been counted. He quoted these examples to show that the origin and history of language are a very different thing from what certain learned philologists have imagined

it. The only other portion of the work of Sir Charles Lyell on which he ventured to offer an opinion is that in which he compares man with the apes, placing them anatomically and physiologically in the same category. To begin with the brain. Even if there were no material structural difference between the brain of man and that of the most man-like ape, what would be the practical value of the resemblance, when the working of the two brains is of a nature so utterly different? The brains of the dog and elephant bear no resemblance to the brain of man or ape, or even to those of each other; yet the dog and elephant are equal, if not indeed superior, in sagacity to the most man-like ape. The brain of the wolf is anatomically the same with that of the dog, but what a vast difference in the working of the two brains! The wolf is an hereditarily untameable, rapacious glutton; the dog has been the friend, companion, and protector of man from the earliest period of history. The common hog is an animal of great intelligence, and wants only a pair of hands like the ape's to enable him to make an equal if not a superior display of it to that of the most anthropoid monkey. The sheep and goat have brains not distinguishable; yet the goat is a very clever animal, and the sheep a very stupid one. Is it not, Mr. Crawford asked, from all this an unavoidable conclusion, that between the brain of man and that of the lower animals, and between the brains of the lower animals among themselves, there exist subtle differences which the most skilful anatomy has not detected, and most probably never will detect? In the dentition of man and the ape there is certainly a singular accord. In the old-world apes, the number, form, and arrangement of the teeth are the same; the American monkeys, however, have four additional teeth, or thirty-six instead of thirty-two. The digestive organs also agree. Yet with this similarity man is omnivorous, and the monkey a frugivorous animal, seemingly resorting to worms and insects only from necessity. The teeth of the monkeys are more powerful, proportionably, than those of man, to enable them to crush the hard-rinded fruits by which they mainly subsist, as well as to serve as weapons of defence, for they have no other. Notwithstanding his seemingly dexterous hands, the monkey can neither fashion nor use an implement or weapon. It is his brain, anatomically so like that of man, but psychologically so unlike, that hinders him from performing this seemingly simple achievement. While the similitudes of the monkeys to man are stated, it might be well to state also the dissimilitudes. In the relation of the sexes the monkeys are sheer brute beasts. All the different races of man intermix to the production of fertile offspring. No intercourse at all takes place between the different species of monkeys. Man, of one variety or another, exists and multiplies in every climate; for there is hardly a country capable of affording him the means of subsistence in which he is not found. The monkeys are chiefly found within the tropics, and seldom above a few degrees beyond them. In adaptation to the vicissitudes of climate, the monkey is not only below man, but below the dog, the hog, the ox, and the horse, for all those thrive from the equator up to the sixtieth degree of latitude. The natural abode of man is the level earth—that of the

monkeys the forest. If there were no forests there would be no monkeys; their whole frame is calculated for this mode of life. Man came into the world naked and houseless, and had to provide himself with clothing and dwelling by the exercise of superior brain and hands. The monkeys are furnished by nature with a clothing like the rest of the lower animals, and their dwellings are not superior to those of the wild boar, nor for a moment comparable to those of the beaver. All the races of man, however low their condition, have been immemorially in a state of domestication; but the monkeys of every species are as incapable of domestication as the wolf, the polar bear, or the tiger. Man has the faculty of storing knowledge for his own use and that of all future generations; in this respect every generation of monkeys resembles that which has preceded it, and so, most probably has it been from the first creation of the family. The special prerogative of man is language; and no race of man, however meanly endowed, has ever been found that had not the capacity of framing one. In this matter the monkey is hardly on a level with the parrot or the magpie. It is not true that the anthropoid apes come nearest to man in intelligence. They ought to do so, if they be the nearest to man in the progress of transmutation by natural selection. Professor Huxley has fully and faithfully described four of these anthropoids; and it appears that, among them, those which anatomically approach the nearest to man are the stupidest. If, adopting the theory of the transmutation of species by natural selection, and we believe the gorilla to be the next step to man in the progress of change, it must be taken for granted that the transmutation must have proceeded from the lower to the higher monkeys. Exclusive of the lemurs, there are some two hundred distinct species. Which species is at the bottom of the long scale implied by this number? and has any naturalist ever ventured to describe the long gradation from it till we reach the gorilla? How are the tailed and the tailless monkeys to be classed, and how are we to place the monkeys of the new world, with their four supernumerary teeth? As to the wide unbridged gulf which divides man from the gorilla, no one has more fully admitted it, and so eloquently described it, as Professor Huxley, himself an advocate of the Darwinian theory. The monkeys, then, have an outward and even a structural resemblance to man beyond all other animals, and that is all; but why nature has bestowed upon them this similarity is a mystery beyond our understanding.
